

REMARKS

Claims 1-53 are all of the claims presently pending in the application. It is noted that the Examiner's listing of claims exempts claim 19 without apparent reason.

The Examiner objects to claims 2-6, 13, 14, 16, 28, 30, 39, 42, and 48 for informalities. Applicants believe the above claim amendments properly address the Examiner's concerns and respectfully request that the Examiner reconsider and withdraw this rejection.

Applicant gratefully acknowledges the Examiner's indication that claims 3, 4, 6, 9-12, 14, 16-18, 20-24, 27, 28, 30, 33-36, 38, and 40-50 would be allowable if rewritten in proper independent format and to overcome any indefiniteness issues. However, Applicants believe that the present invention defined all claims, when properly understood, is clearly patentable over the prior art of record.

It is noted that Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 2, 5, 7, 8, 13, 15, 25, 26, 29, 31, 32, 37, 39, and 51-53 stand rejected under 35 USC §103(a) as unpatentable over US Patent Publication No. 2002/0122504 to Payne et al., further in view of US Patent Publication No. 2001/0010709 to Iwamatsu et al.

The prior art rejection is respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed in independent claim 1, is directed to a method for estimating a threshold value in deciding data along an amplitude by a terminal performing wireless communication with a wireless station in accordance with multi-level QAM (quadrature amplitude modulation). It is presupposed which one of multiple levels can be a level of a received data signal, and a plurality of threshold values assumed (referred to herein as 'assumed threshold values') in association with the presupposition is set up. The assumed threshold values based on the received data is updated sequentially, and an ultimate threshold value is selected from the plural assumed threshold values.

In a conventional method described in paragraph [0011] on page 7 of the specification there is no amplitude information transmitted from the base station to the terminal (UE).

Thus, the terminal side has to estimate the threshold value.

In contrast, the present invention provides a method by which, when no definite amplitude information is supplied from a transmission side in an n-ary (multi-level) QAM system, the threshold can be estimated to achieve amplitude synchronization to demodulate the data.

II. THE PRIOR ART REJECTION

The Examiner alleges that Payne, when modified by Iwamatsu, renders obvious the present invention defined by claims 1, 2, 5, 7, 8, 13, 15, 25, 26, 29, 31, 37, 39, and 51-53. Applicant respectfully disagrees.

First of all, Applicant submits that the present invention differs from the cited references in its objective. Payne discloses that an inter symbol interference is compensated (paragraph 0004) and Iwamatsu discloses that a distortion received by the RF uint of receiver is compensated (claim 1), whereas in the present invention, a plurality of threshold values are assumed because the amplitude information is not transmitted from a system. Moreover, the present invention discloses the feature that is selecting an ultimate threshold value from the plurality of assumed threshold values.

That is, as defined by, for example, independent claim 1, the method of the present invention includes the initial step of presupposing which of possible levels the received signal, setting up a plurality of threshold values assumed in association with the presupposition, updating the assumed threshold values, and then selecting one of the assumed threshold values.

In contrast, the method of Payne fails to suggest making an initial presupposition. The Examiner points to paragraph [0022] of Payne as demonstrating this presupposition step. However, Applicant submits that the method described in this paragraph is not reasonably related to a “presupposition”, as the Examiner characterizes. Rather, this paragraph merely sets up a plurality of threshold values, and there is no “presuppositions” involved.

Indeed, the process of determination in Payne is clearly described in the preceding paragraph [0021] wherein is described how the two bits preceding the current bit B_n are used to determine the present threshold level. This process is different from that of initially

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NEG-325US (KATO.032)

making a presupposition, as required by the plain meaning of the claim language. Secondary reference Iwamatsu is not relied upon in a manner to overcome this fundamental deficiency of primary reference Payne.

Hence, turning to the clear language of the claims, in Payne there is no teaching or suggestion of: "... presupposing in which one of multiple levels can be a level of a received data signal and setting up a plurality of threshold values assumed (referred to herein as 'assumed threshold values') in association with said presupposition; updating sequentially the assumed threshold values based on the received data; and selecting an ultimate threshold value from said plural assumed threshold values", as required by independent claim 1. The remaining independent claims have similar language.

Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection currently of record based upon Payne.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-53, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

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Respectfully Submitted,


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